REMARKS

This is in response to the Office Action dated January 10, 2008. In view of the foregoing amendments and following representations, reconsideration is respectfully requested.

By the above amendments, claim 5 is amended and claims 10-12 are newly presented. Support for new claim 10 can be found at least in Fig. 1 and page 9, line 11 to page 10, line 2 of the specification as originally filed. Support for new claims 11-12 can be found at least in Fig. 1 as originally filed.

On page 2 of the Office Action, the drawings are objected to because reference numeral 34a is described but not shown in the drawing figures. Accordingly, Fig. 1 has been amended to include reference numeral 34a. A replacement sheet for Fig. 1 is submitted herewith. Note that reference numeral 34a indicates the threads of the sub ring 34 as described in lines 6-10 of the specification as originally filed.

Next, on pages 3-6 of the Office Action, the Examiner objects to the substitute specification filed on April 20, 2007. In response, the description considered by the Examiner to represent new matter has been removed from the specification. Also, clarifying amendments have been made to pages 7 and 9 of the substitute specification. Accordingly, it is submitted that the objection to the specification is now clearly obviated.

Next, on page 7 of the Office Action, claims 5-9 are rejected under 35 U.S.C. 112, first paragraph as failing to comply with the enablement requirement. To avoid the confusion caused by the "pressed" language, claim 5 has been amended to recite that the sub ring applies an axially

directed force to the main ring. Thus, it is submitted that the present invention, as embodied by claim 5, is clearly enabled by the specification as originally filed. One skilled in the art would be able to both make and use the claimed invention.

Next, on pages 8-10 of the Office Action, claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Steck et al. (U.S. Patent No. 6,402,486) in view of Taga (U.S. Patent Application Publication No. 2002/0093144) and further in view of Kutz (U.S. Patent No. 5,749,690). It is submitted that the present invention, as defined in the amended and new claims, now clearly distinguishes over the Steck, Taga and Kutz references for the following reasons.

The present invention, as defined in claim 5, requires, *inter alia*:

"a main ring engaged via threads with an annular wall of said main body block, said main ring being movable rotationally relative to said main body block to insert the annular wall of said main body block into an annular space defined between an axially extending outer annular portion of said main ring and an axially extending inner annular portion of said main ring such that a peripheral portion of said barrier membrane is clamped and thus fixedly secured to said main body block."

In an attempt to read this limitation on the Steck reference, the Examiner refers to Fig. 4 and asserts that the engagement portion 84 and lip 86 of the slip ring 20 correspond to the "axially extending outer annular portion of said main ring" and the "axially extending inner annular portion of said main ring." However, the sections of the Steck slip ring, which form a single axially extending wall, do not form an annular space receiving an annular wall of the main body block (body 16) to clamp a peripheral portion of the barrier membrane. As clearly shown in

Fig. 3A, no part of the diaphragm 60 is received between the engagement portion 84 and the lip 86 of slip ring 20. Thus, Steck clearly does not meet this limitation of claim 5.

Further, claim 5 specifies that the annular space is defined between the inner and outer annular portions of the main ring. The Examiner relies on the cantilever 76 of head 22 to define the annular space. However, the head is considered by the Examiner to correspond to the sub ring of claim 5. Thus, the Examiner's interpretation of the Steck reference does not meet the express language of claim 5, nor is the referenced structure interrelated with the membrane as required by the claim language.

Further, new claim 11 recites that the axially extending outer annular portion of said main ring is radially spaced from the axially extending inner annular portion of said main ring. Clearly, the portions of the single annular wall of the Steck slip ring are not radially spaced. Also, claim 12 requires that the peripheral portion of said barrier membrane is clamped by being directly contacted by said main body block and said main ring. In clear contrast, the Steck diaphragm is clamped between body 16 and wedge 80 of head 22.

Further, as indicated above, the Examiner takes the position that head 22 of Steck corresponds to the sub ring recited in claim 5. However, claim 5 now specifies that the sub ring is engaged via a thread with a threaded section of said pilot valve assembly block such that, by threading said sub ring onto said pilot valve assembly block, an axial force is applied by said sub ring to said main ring to prevent rotational movement thereof. In Steck, the head 22a does not press any structure when the pilot 30 is threaded therein. Clearly, the head 22a does not apply an axially directed force to the main ring, and thus it obviously does not act to prevent rotational

movement of the main ring.

On page 9 of the Office Action, the Examiner acknowledges that the Steck reference does not show the claimed relationship between the main ring and the main body block as described above. In an attempt to supply the deficiencies of Steck, the Examiner applies the Taga reference. Taga, however, discloses in Fig. 13 a pipe connector structure including a connector main body 50d and a fastening member 80d. It is not clear how or why the pipe connector would be applied in the pump of Steck. Note that the Steck slip ring 20a is provided for the purpose of drawing the cantilever 76 of head 22 toward the body 16. The Taga fastening member 80d (considered by the Examiner to correspond to the main ring of claim 5) could not perform the function of the Steck slip ring. Thus, there could be no reason to combine the Steck and Taga references as proposed by the Examiner.

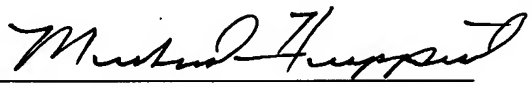
Further, contrary to the assertions made on pages 8-9 of the Office Action, the Examiner acknowledges that the Steck/Taga combination does not disclose the sub ring recited in claim 5. The Kutz reference is applied to teach a sub ring on a valve assembly. Kutz, however, is directed to a screw nut fastener assembly having a nut 10, a snap ring 15 and a cap unit 16. The Examiner takes the position that the cylindrical outer wall 11 of the nut 10 corresponds to the claimed sub ring. It is unclear how the nut unit of Kutz would be employed in the Steck diaphragm pump, which has already been modified in view of the Taga pipe connector. The Examiner is requested to explain how the Steck head 22a, which is secured by the slip ring 20a, would be modified in view of the teachings of Kutz. The nut fastener of Kutz would not appear to provide any significant function in the pump of Steck.

In view of the above, it is submitted that the present application is now clearly in condition for allowance. The Examiner therefore is requested to pass this case to issue.

In the event that the Examiner has any comments or suggestions of a nature necessary to place this case in condition for allowance, then the Examiner is requested to contact Applicant's undersigned attorney by telephone to promptly resolve any remaining matters.

Respectfully submitted,

Shigeru MURATA

By: 

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